

ASSIGNMENT 7

Textbook Assignment: "Clutches and Automatic Transmissions," pages 7-1 through 7-25.

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- 7-1. The automatic transmission of a vehicle matches power and speed to what factor?
1. RPM
 2. Maximum torque
 3. Load requirements
 4. Minimum torque required
- 7-2. The pressure plate of a clutch assembly is held tightly against the flywheel by what means?
1. Spring pressure
 2. Hydraulic pressure
 3. Threaded bolts
 4. Lever links
- 7-3. A flexible cable clutch release mechanism is most commonly used with what type of equipment?
1. Construction
 2. Automotive
 3. Allied
 4. MHE
- 7-4. A hydraulic type of clutch release mechanism is normally found on heavy construction equipment for which of the following reasons?
1. Low-release pressure is required to operate the clutch
 2. A slow-release action is required to operate the clutch
 3. Extreme pressure is required to operate the clutch
- 7-5. A double-disk clutch has an additional driven disk and what other part?
1. A clutch disk
 2. A pressure plate
 3. A driving plate
- 7-6. Which of the following symptoms is common to clutch malfunction?
1. Dragging
 2. Slipping
 3. Noise
 4. Each of the above
- 7-7. Clutch slippage is most noticeable during which of the following conditions?
1. When the vehicle is cold
 2. When the vehicle is hot
 3. When the vehicle is heavily loaded
 4. When the vehicle is traveling at high speeds
- 7-8. When you notice insufficient clutch pedal free travel, you should check which of the following items?
1. The linkage for proper adjustment
 2. The release bearing for wear or dryness
 3. The friction disk facing for normal surface condition
- 7-9. To avoid the need for rework, you should replace the complete clutch assembly.
1. True
 2. False
- 7-10. Which of the following practices is recommended to correct a stiff clutch pedal?
1. Oiling the disk facings
 2. Riding the clutch
 3. Lubricating the clutch linkage
 4. Adjusting free travel of the pedal

- 7-11. When the clutch is being uncoupled, a series of slight movements (pulsations) can be felt on the clutch pedal. The trouble indicated may be caused by which of the following conditions?
1. A warped pressure plate or warped clutch disk
 2. The flywheel not being seated on the crankshaft flange
 3. Misalignment of the engine and transmission
 4. Each of the above

IN ANSWERING QUESTIONS 7-12 THROUGH 7-21, SELECT FROM COLUMN B THE TYPE OF CLUTCH TROUBLE CAUSED BY THE CONDITION IN COLUMN A. RESPONSES IN COLUMN B MAY BE USED ONCE OR MORE THAN ONCE. USE TABLE 7-1 IN YOUR TRAMAN AS A REFERENCE.

<u>A. CONDITIONS</u>	<u>B. TYPES OF TROUBLE</u>
7-12. Faulty clutch master cylinder	1. Clutch slippage
7-13. Improperly installed release arm	2. Clutch release failure
7-14. Excessive free play in clutch pedal linkage	3. Clutch grab or chatter
7-15. Seized pilot bearing on transmission shaft	4. Clutch noise
7-16. Binding clutch linkage	
7-17. Oil-soaked clutch plate	
7-18. Broken engine mounts	
7-19. Worn clutch drive plate	
7-20. Warped pressure plate	
7-21. Worn clutch release bearing	

- 7-22. Which of the following is the reaction member in a Turbo Hydra-matic 400 transmission torque converter?
1. The pump
 2. The turbine
 3. The stator
 4. The lock up clutch
- 7-23. In automatic transmissions, gears are designed so several teeth are in contact with one another at one time. This design is used for which of the following reasons?
1. To provide greater strength
 2. To provide greater gear reduction
 3. To reduce gear clash
 4. To increase torque
- 7-24. When torque is increased during the operation of a planetary transmission, what will happen to the output speed?
1. It will remain the same
 2. It will increase
 3. It will decrease
- 7-25. Your holding the sun gear stationary and applying power to the internal gear in a clockwise direction will produce what result in gearing?
1. Overdrive
 2. Reverse
 3. Direct drive
 4. Reduction
- 7-26. What results when two members of a planetary gearset rotate together?
1. Reverse
 2. Low gearing
 3. High gearing
 4. Direct drive

- 7-27. What means or device within the torque converter allows for shifting without interruption of engine torque application?
1. The turbine
 2. The fluid coupling
 3. The stator
 4. The impeller
- 7-28. In an automotive application, the converter cover is normally attached to the engine by what means?
1. Bolted to a slotted drive
 2. Bolted to a flex-plate
 3. Bolted to a flywheel ring
 4. Bolted to a clutch plate
- 7-29. When the engine is running, the converter pump is operational.
1. True
 2. False
- 7-30. With the engine operating at full throttle, the transmission in gear, and the vehicle standing still, the converter is capable of multiplying engine torque by approximately what ratio?
1. 4:1
 2. 1:2
 3. 2:1
 4. 1:4
- 7-31. The torque converter acts as a fluid coupling during which of the following events?
1. When the stator is active
 2. When the impeller and the turbine are rotating about the same speed
 3. When the transmission is in reverse gear
- 7-32. The Turbo Hydra-matic 400 uses what type of hydraulic pump to build pressure?
1. Positive diaphragm
 2. Piston
 3. Rotary vane
 4. Internal gear
- 7-33. Oil returning from the converter is directed to which of the following locations?
1. The transmission cooler
 2. The transmission sump
 3. The transmission pump inlet
 4. The converter inlet
- 7-34. The pressure regulator of a Turbo Hydra-matic 400 type of transmission maintains approximately what line pressure at idle?
1. 35 psi
 2. 60 psi
 3. 70 psi
 4. 100 psi
- 7-35. The small area of the forward clutch serves what purpose?
1. To provide final holding force
 2. To provide line pressure
 3. To provide smooth, initial take-up
 4. To release pressure
- 7-36. The secondary weights of the governor act on which of the following components?
1. The regulating valve
 2. The output shaft
 3. The vacuum gear
- 7-37. A variable oil pressure is used to control upshift at a higher vehicle speed. This pressure is also known by what other terminology?
1. Governor pressure
 2. Torque pressure
 3. Modulator pressure
 4. Vacuum pressure
- 7-38. Modulator pressure is regulated by engine vacuum and is an indicator of which of the following settings?
1. Throttle
 2. Shift valve
 3. Regulator valve

- 7-39. Higher clutch pack apply pressure is required during what engine event?
1. Idle
 2. Half speed
 3. Full throttle
- 7-40. Between hot and cold, the automatic transmission fluid level will vary what maximum measure?
1. 1/4 inch
 2. 1/2 inch
 3. 3/4 inch
 4. 1 inch
- 7-41. In addition to giving off a burnt smell, overheated transmission fluid will turn what color?
1. Brown
 2. Black
 3. Red
 4. Milky
- 7-42. Your using transmission fluid that is incompatible with the unit you are working on may lead to which of the following problems?
1. Early transmission failure
 2. Damage resulting in transmission overhaul
 3. Both 1 and 2 above
 4. Transmission overheating problems
- 7-43. Air trapped in the hydraulic system of an automatic transmission will cause which of the following problems?
1. Slow application of the clutch packs
 2. High-line pressure
 3. Hardshifting
 4. Low-torque output
- 7-44. Water mixed with automatic transmission fluid will turn the fluid what color?
1. Brown
 2. Milky
 3. Pink
- 7-45. When a lock up band on a Turbo Hydra-matic 400 transmission does not meet required specifications, what action should you take?
1. Tighten the adjusting nut to 125-inch pounds and back it off 1 1/2 turns
 2. Tighten the adjusting nut to 100-inch pounds and lock it in place
 3. Replace the band
- 7-46. "Severe service" includes which of the following conditions?
1. Taxi service
 2. Trailer towing
 3. Stop and go driving
 4. All of the above
- 7-47. Rags are an acceptable item to dry a screen in an automatic transmission.
1. True
 2. False
- 7-48. Most modern torque converters do NOT have which of the following parts?
1. A drain plug
 2. A stator
 3. A turbine
 4. A pump
- 7-49. Which of the following methods should you use to remove air trapped in a transmission hydraulic system?
1. Road testing the vehicle and rechecking the fluid upon returning from the test
 2. Moving the gear selector through all positions several times with the engine running and the brakes applied
 3. Letting the unit sit for 10 minutes while the fluid settles

7-50. What would most likely cause the fluid in an automatic transmission to foam?

1. Underfilling
2. Wrong fluid
3. Overfilling

7-51. To complete any repairs on an automotive transmission, you must remove the transmission from the vehicle.

1. True
2. False

IN ANSWERING QUESTIONS 7-52 THROUGH 7-58, SELECT FROM COLUMN B THE TYPE OF TRANSMISSION TROUBLE CAUSED BY THE CONDITION IN COLUMN A. RESPONSES IN COLUMN B MAY BE USED ONCE OR MORE THAN ONCE. USE TABLE 7-2 IN YOUR TRAMAN AS A REFERENCE.

	<u>A. CONDITIONS</u>	<u>B. TYPES OF TROUBLE</u>
7-52.	No drive in drive range	1. Vacuum modulator sticking
7-53.	No part throttle downshift	2. Rear band inoperative
7-54.	No engine braking in first gear	3. Forward clutch inoperative or slipping
7-55.	No detent downshift	
7-56.	High or low oil pressure	4. Two-three shift valve sticking
7-57.	Slipping in reverse	
7-58.	No engine braking in second gear	

7-59. For you to troubleshoot an automatic transmission, an engine does not have to be in good running condition.

1. True
2. False

7-60. During overhaul, the incorrect disassembly of an automatic transmission may cause what result?

1. Minor parts damage only
2. Severe parts damage only
3. Unnecessary equipment down time only
4. Severe parts damage and unnecessary equipment down time

7-61. During an automatic transmission overhaul, an air compressor is used for which of the following purposes?

1. To conduct tests
2. To blow-dry parts
3. Both 1 and 2 above
4. To disassemble clutch packs

7-62. When you disassemble an automatic transmission, you must remove what component before removing the valve body?

1. The control valve spacer
2. The vacuum modulator
3. The rear servo
4. The check balls

7-63. The hollow bolt used in the assembly of a Turbo Hydra-matic 400 transmission is an oil passage for what component?

1. The rear band
2. The intermediate clutch
3. The rear clutch
4. The forward clutch

7-64. After troubleshooting, what action should you take if the torque converter of a Turbo Hydra-matic 400 transmission proves to be the problem?

1. Rebuild the torque converter
2. Replace the torque converter
3. Reuse the torque converter after flushing